

Thomas H Prettyman

List of Publications by Year in descending order

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125
papers

8,925
citations

53660

45
h-index

40881

93
g-index

131
all docs

131
docs citations

131
times ranked

3896
citing authors

#	ARTICLE	IF	CITATIONS
1	Distribution of Hydrogen in the Near Surface of Mars: Evidence for Subsurface Ice Deposits. <i>Science</i> , 2002, 297, 81-85.	6.0	884
2	Global Distribution of Neutrons from Mars: Results from Mars Odyssey. <i>Science</i> , 2002, 297, 75-78.	6.0	468
3	Global distribution of near-surface hydrogen on Mars. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	423
4	Dawn at Vesta: Testing the Protoplanetary Paradigm. <i>Science</i> , 2012, 336, 684-686.	6.0	422
5	Elemental composition of the lunar surface: Analysis of gamma ray spectroscopy data from Lunar Prospector. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a.	3.3	342
6	The presence and stability of ground ice in the southern hemisphere of Mars. <i>Icarus</i> , 2004, 169, 324-340.	1.1	299
7	Evidence for water ice near the lunar poles. <i>Journal of Geophysical Research</i> , 2001, 106, 23231-23251.	3.3	296
8	Ammoniated phyllosilicates with a likely outer Solar System origin on (1) Ceres. <i>Nature</i> , 2015, 528, 241-244.	13.7	276
9	Understanding the Lunar Surface and Space-Moon Interactions. <i>Reviews in Mineralogy and Geochemistry</i> , 2006, 60, 83-219.	2.2	274
10	Vesta's Shape and Morphology. <i>Science</i> , 2012, 336, 687-690.	6.0	222
11	Iron abundances on the lunar surface as measured by the Lunar Prospector gamma-ray and neutron spectrometers. <i>Journal of Geophysical Research</i> , 2002, 107, 13-1-13-26.	3.3	220
12	Elemental Mapping by Dawn Reveals Exogenic H in Vesta's Regolith. <i>Science</i> , 2012, 338, 242-246.	6.0	201
13	Thorium abundances on the lunar surface. <i>Journal of Geophysical Research</i> , 2000, 105, 20307-20331.	3.3	190
14	Dawn; the Vesta's HED connection; and the geologic context for eucrites, diogenites, and howardites. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2090-2104.	0.7	185
15	Dawn arrives at Ceres: Exploration of a small, volatile-rich world. <i>Science</i> , 2016, 353, 1008-1010.	6.0	178
16	Evidence for Water Ice Near Mercury's North Pole from MESSENGER Neutron Spectrometer Measurements. <i>Science</i> , 2013, 339, 292-296.	6.0	173
17	Small-area thorium features on the lunar surface. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	171
18	Extensive water ice within Ceres' aqueously altered regolith: Evidence from nuclear spectroscopy. <i>Science</i> , 2017, 355, 55-59.	6.0	169

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19	Dawn's Gamma Ray and Neutron Detector. <i>Space Science Reviews</i> , 2011, 163, 371-459.	3.7	160
20	Improved modeling of Lunar Prospector neutron spectrometer data: Implications for hydrogen deposits at the lunar poles. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	136
21	Dawn Mission to Vesta and Ceres. <i>Earth, Moon and Planets</i> , 2007, 101, 65-91.	0.3	125
22	Gamma-Ray, Neutron, and Alpha-Particle Spectrometers for the Lunar Prospector mission. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	109
23	Composition and structure of the Martian surface at high southern latitudes from neutron spectroscopy. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	101
24	Dawn: A journey in space and time. <i>Planetary and Space Science</i> , 2004, 52, 465-489.	0.9	100
25	MCNPX benchmark for cosmic ray interactions with the Moon. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	92
26	Tomographic Gamma Scanning to Assay Heterogeneous Radioactive Waste. <i>Nuclear Science and Engineering</i> , 1994, 118, 145-152.	0.5	91
27	Composition of the Rheasilvia basin, a window into Vesta's interior. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 335-346.	1.5	84
28	High resolution measurements of absolute thorium abundances on the lunar surface. <i>Geophysical Research Letters</i> , 1999, 26, 2681-2684.	1.5	83
29	Insights into Ceres's evolution from surface composition. <i>Meteoritics and Planetary Science</i> , 2018, 53, 1820-1843.	0.7	73
30	Depth, distribution, and density of CO ₂ deposition on Mars. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	72
31	Chondritic models of 4 Vesta: Implications for geochemical and geophysical properties. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2300-2315.	0.7	66
32	Hydrated states of MgSO ₄ at equatorial latitudes on Mars. <i>Geophysical Research Letters</i> , 2004, 31, .	1.5	65
33	Carbonaceous chondrites as analogs for the composition and alteration of Ceres. <i>Meteoritics and Planetary Science</i> , 2018, 53, 1793-1804.	0.7	65
34	Composition from fast neutrons: Application to the Moon. <i>Geophysical Research Letters</i> , 2001, 28, 3797-3800.	1.5	64
35	Global spatial deconvolution of Lunar Prospector Th abundances. <i>Geophysical Research Letters</i> , 2007, 34, .	1.5	64
36	An aqueously altered carbon-rich Ceres. <i>Nature Astronomy</i> , 2019, 3, 140-145.	4.2	62

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37	Observations, Meteorites, and Models: A Preflight Assessment of the Composition and Formation of (16) Psyche. <i>Journal of Geophysical Research E: Planets</i> , 2020, 125, e2019JE006296.	1.5	61
38	Dawn completes its mission at 4 Vesta. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2076-2089.	0.7	54
39	Compositional variability on the surface of 4 Vesta revealed through γ measurements of high-energy gamma rays. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2252-2270.	0.7	53
40	Mars Odyssey neutron data: 2. Search for buried excess water ice deposits at nonpolar latitudes on Mars. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	51
41	Impact-driven mobilization of deep crustal brines on dwarf planet Ceres. <i>Nature Astronomy</i> , 2020, 4, 741-747.	4.2	50
42	Hydrogen content of sand dunes within Olympia Undae. <i>Icarus</i> , 2008, 196, 422-432.	1.1	49
43	Pitted terrains on (1) Ceres and implications for shallow subsurface volatile distribution. <i>Geophysical Research Letters</i> , 2017, 44, 6570-6578.	1.5	48
44	Olivine or impact melt: Nature of the "Orange" material on Vesta from Dawn. <i>Icarus</i> , 2013, 226, 1568-1594.	1.1	47
45	Neutron absorption constraints on the composition of 4 Vesta. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2211-2236.	0.7	47
46	CO ₂ frost cap thickness on Mars during northern winter and spring. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	45
47	Ceres: Astrobiological Target and Possible Ocean World. <i>Astrobiology</i> , 2020, 20, 269-291.	1.5	43
48	SURFACE ALBEDO AND SPECTRAL VARIABILITY OF CERES. <i>Astrophysical Journal Letters</i> , 2016, 817, L22.	3.0	42
49	The Dependence of the Cerean Exosphere on Solar Energetic Particle Events. <i>Astrophysical Journal Letters</i> , 2017, 838, L8.	3.0	41
50	Conditions for Sublimating Water Ice to Supply Ceres' Exosphere. <i>Journal of Geophysical Research E: Planets</i> , 2017, 122, 1984-1995.	1.5	40
51	Ice concentration and distribution near the south pole of Mars: Synthesis of odyssey and global surveyor analyses. <i>Geophysical Research Letters</i> , 2002, 29, 10-1-10-4.	1.5	38
52	Characterization of Mars' seasonal caps using neutron spectroscopy. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	37
53	Gamma-ray and neutron spectrometer for the Dawn mission to 1 Ceres and 4 Vesta. <i>IEEE Transactions on Nuclear Science</i> , 2003, 50, 1190-1197.	1.2	36
54	The geology of the Marcia quadrangle of asteroid Vesta: Assessing the effects of large, young craters. <i>Icarus</i> , 2014, 244, 74-88.	1.1	36

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55	Vertical distribution of hydrogen at high northern latitudes on Mars: The Mars Odyssey Neutron Spectrometer. <i>Geophysical Research Letters</i> , 2007, 34, .	1.5	35
56	Distribution of iron on Vesta. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2237-2251.	0.7	35
57	Topographic control of hydrogen deposits at low latitudes to midlatitudes of Mars. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	34
58	Detection of serpentine in exogenic carbonaceous chondrite material on Vesta from Dawn FC data. <i>Icarus</i> , 2014, 239, 222-237.	1.1	34
59	Concentrations of potassium and thorium within Vesta's regolith. <i>Icarus</i> , 2015, 259, 39-52.	1.1	33
60	A Global Inventory of Ice-Related Morphological Features on Dwarf Planet Ceres: Implications for the Evolution and Current State of the Cryosphere. <i>Journal of Geophysical Research E: Planets</i> , 2019, 124, 1650-1689.	1.5	33
61	Exploring the asteroid belt with ion propulsion: Dawn mission history, status and plans. <i>Advances in Space Research</i> , 2007, 40, 193-201.	1.2	32
62	H layering in the top meter of Mars. <i>Icarus</i> , 2008, 196, 409-421.	1.1	32
63	Electrode design for coplanar-grid detectors. <i>IEEE Transactions on Nuclear Science</i> , 1997, 44, 713-720.	1.2	30
64	Evidence for a high-Th, evolved lithology on the Moon at Hansteen Alpha. <i>Geophysical Research Letters</i> , 2005, 32, n/a-n/a.	1.5	30
65	Evidence of non-uniform crust of Ceres from Dawn's high-resolution gravity data. <i>Nature Astronomy</i> , 2020, 4, 748-755.	4.2	30
66	Constraints on Vesta's elemental composition: Fast neutron measurements by Dawn's gamma ray and neutron detector. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2271-2288.	0.7	28
67	The contamination of the surface of Vesta by impacts and the delivery of the dark material. <i>Icarus</i> , 2014, 240, 86-102.	1.1	28
68	Fast neutron flux spectrum aboard Mars Odyssey during cruise. <i>Journal of Geophysical Research</i> , 2002, 107, SSH 2-1.	3.3	27
69	Driven by excess? Climatic implications of new global mapping of near-surface water-equivalent hydrogen on Mars. <i>Icarus</i> , 2018, 301, 97-116.	1.1	27
70	Dawn Discovery mission to Vesta and Ceres: Present status. <i>Advances in Space Research</i> , 2006, 38, 2043-2048.	1.2	26
71	A combined transmission and scattering tomographic approach to composition and density imaging. <i>Applied Radiation and Isotopes</i> , 1993, 44, 1327-1341.	0.7	25
72	Surface Composition of Vesta: Issues and Integrated Approach. <i>Space Science Reviews</i> , 2011, 163, 117-139.	3.7	25

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73	Technical Comment on "Hydrogen Mapping of the Lunar South Pole Using the LRO Neutron Detector Experiment LEND" Science, 2011, 334, 1058-1058.	6.0	25
74	Sensitivity of orbital neutron measurements to the thickness and abundance of surficial lunar water. Journal of Geophysical Research, 2011, 116, .	3.3	24
75	Using HED meteorites to interpret neutron and gamma-ray data from asteroid 4 Vesta. Meteoritics and Planetary Science, 2015, 50, 1311-1337.	0.7	24
76	Performance of Orbital Neutron Instruments for Spatially Resolved Hydrogen Measurements of Airless Planetary Bodies. Astrobiology, 2010, 10, 183-200.	1.5	23
77	CdZnTe gamma-ray spectrometer for orbital planetary missions. IEEE Transactions on Nuclear Science, 2002, 49, 1881-1886.	1.2	22
78	Bulk hydrogen abundances in the lunar highlands: Measurements from orbital neutron data. Icarus, 2015, 255, 127-134.	1.1	21
79	Volatiles on Mars: scientific results from the Mars Odyssey Neutron Spectrometer. , 2008, , 125-148.		20
80	Water Vapor Contribution to Ceres' Exosphere From Observed Surface Ice and Postulated Ice-Exposing Impacts. Journal of Geophysical Research E: Planets, 2019, 124, 61-75.	1.5	20
81	Latitude variation of the subsurface lunar temperature: Lunar Prospector thermal neutrons. Journal of Geophysical Research, 2003, 108, .	3.3	19
82	The Putative Cerean Exosphere. Astrophysical Journal, 2017, 850, 85.	1.6	19
83	A roadmap for planetary caves science and exploration. Nature Astronomy, 2021, 5, 524-525.	4.2	19
84	Mars odyssey neutron sensing of the south residual polar cap. Geophysical Research Letters, 2003, 30, .	1.5	18
85	Asteroid (4) Vesta II: Exploring a geologically and geochemically complex world with the Dawn Mission. Chemie Der Erde, 2015, 75, 273-285.	0.8	18
86	<title>Effect of surfaces on the performance of CdZnTe detectors</title>. , 2001, , .		17
87	Martian polar processes. , 2008, , 578-598.		17
88	Recharge mechanism of near-equatorial hydrogen on Mars: Atmospheric redistribution or sub-surface aquifer. Geophysical Research Letters, 2004, 31, .	1.5	16
89	Title is missing!. Journal of Radioanalytical and Nuclear Chemistry, 2001, 248, 295-300.	0.7	15
90	Surface and Downhole Prospecting Tools for Planetary Exploration: Tests of Neutron and Gamma Ray Probes. Astrobiology, 2008, 8, 639-652.	1.5	14

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91	K–Th–Ti systematics and new three–component mixing model of HED meteorites: Prospective study for interpretation of gamma–ray and neutron spectra for the Dawn mission. Meteoritics and Planetary Science, 2010, 45, 1170-1190.	0.7	14
92	Physics-based generation of gamma-ray response functions for CdZnTe detectors. Journal of Radioanalytical and Nuclear Chemistry, 1998, 233, 257-264.	0.7	13
93	Distinguishing the Origin of Asteroid (16) Psyche. Space Science Reviews, 2022, 218, 17.	3.7	13
94	Vesta, vestoids, and the HED meteorites: Interconnections and differences based on <i>Dawn</i> Framing Camera observations. Journal of Geophysical Research E: Planets, 2013, 118, 1991-2003.	1.5	11
95	Igneous lithologies on asteroid (4) Vesta mapped using gamma-ray and neutron data. Icarus, 2017, 286, 35-45.	1.1	11
96	A Probabilistic Approach to Determination of Ceres' Average Surface Composition From Dawn Visible–infrared Mapping Spectrometer and Gamma Ray and Neutron Detector Data. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006606.	1.5	11
97	Remote Sensing of Chemical Elements Using Nuclear Spectroscopy. , 2014, , 1161-1183.		10
98	Remote Chemical Sensing Using Nuclear Spectroscopy. , 2007, , 765-786.		9
99	Compositional variability on the surface of 1 Ceres revealed through GRaND measurements of high–energy gamma rays. Meteoritics and Planetary Science, 2018, 53, 1805-1819.	0.7	9
100	Search for water outgassing of (1) Ceres near perihelion. Astronomy and Astrophysics, 2019, 628, A22.	2.1	9
101	Concepts for the Future Exploration of Dwarf Planet Ceres–TM Habitability. Planetary Science Journal, 2022, 3, 41.	1.5	9
102	Dawn–TM's Gamma Ray and Neutron Detector. , 2011, , 371-459.		8
103	Spacecraft instrument technology and cosmochemistry. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 19177-19182.	3.3	8
104	Unique, Antique Vesta. Elements, 2014, 10, 39-44.	0.5	8
105	Fundamental Science and Engineering Questions in Planetary Cave Exploration. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	8
106	Mapping the elemental composition of Ceres and Vesta: Dawn"s gamma ray and neutron detector. , 2004, , .		7
107	<title>Characterization of a large-volume multi-element CdZnTe detector</title>. , 2000, 4141, 1.		6
108	DPA-Based Fast Neutron Dosimeter for the Space Environment. IEEE Transactions on Nuclear Science, 2013, 60, 830-836.	1.2	6

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109	The CO ₂ Cycle. , 2017, , 374-404.		5
110	Simulation of Compton camera imaging with a specific purpose Monte Carlo code. Applied Radiation and Isotopes, 2000, 53, 673-680.	0.7	4
111	Deciphering Redox State for a Metal-Rich World. Space Science Reviews, 2022, 218, 6.	3.7	4
112	Determining the Relative Cratering Ages of Regions of Psyche's Surface. Space Science Reviews, 2022, 218, 1.	3.7	4
113	Space neutron spectrometer design with SSPM-based instrumentation. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 652, 342-346.	0.7	3
114	<title>Evaluation of the Compton camera method for spectroscopic imaging with ambient-temperature detector technology</title>. , 1999, , .		2
115	Comparison of neutron sensitive scintillators for use with a solid-state optical detector. , 2009, , .		2
116	Integration of a 6LiInSe ₂ thermal neutron detector into a CubeSat instrument. Journal of Astronomical Telescopes, Instruments, and Systems, 2016, 2, 046001.	1.0	2
117	Neutron, Gamma-Ray, and X-Ray Spectroscopy of Planetary Bodies. , 2019, , 588-603.		2
118	Replenishment of Near-Surface Water Ice by Impacts Into Ceres' Volatile-Rich Crust: Observations by Dawn's Gamma Ray and Neutron Detector. Geophysical Research Letters, 2021, 48, e2021GL094223.	1.5	2
119	Neutron, Gamma-Ray, and X-Ray Spectroscopy. , 2019, , 191-238.		1
120	Ceres, a wet planet: The view after Dawn. Chemie Der Erde, 2022, 82, 125745.	0.8	1
121	<title>High-energy characterization of two large-volume multielement CdZnTe detectors</title>. , 2001, , .		0
122	<title>Combined gamma-ray and neutron detector for measuring the chemical composition of airless planetary bodies</title>. , 2001, , .		0
123	Neutron detectors based on CMOS solid state photomultipliers. Proceedings of SPIE, 2008, , .	0.8	0
124	Surface Composition of Vesta: Issues and Integrated Approach. , 2011, , 117-139.		0
125	Carbon and Organic Matter on Ceres. , 2022, , 121-133.		0